Written Statement of Joseph H. Boardman,
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before the
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Chairman LaTourette, Ranking Member Brown, and other members of the Subcommittee, I am very pleased to be here today to testify, on behalf of the Secretary of Transportation, about "Current Issues in Rail Transportation of Hazardous Materials." Safety is our top priority, and the strategy we use to promote safety is, first, to prevent accidents by means of research, regulation, inspection, investigation, and enforcement; and second, to mitigate, by those same methods, the consequences of accidents that do occur. Recent statistics show that the rail industry's safety performance, as a whole, is improving. In particular, the vast majority of hazardous materials shipped by rail tank car every year arrive safely and without incident, and railroads generally have an outstanding record in moving shipments of hazardous materials safely.

However, some recent train accidents involving the release of hazardous material have highlighted specific issues requiring government and industry attention. The safe transportation of hazardous materials by rail is necessarily dependent on the safety of the entire railroad system as a whole, and the failure of even a single part of this system can lead to a catastrophic accident. As I will explain, FRA is targeting the most frequent causes of accidents; focusing our oversight resources on the areas of highest risk; and accelerating research efforts that have the potential to mitigate the largest potential risks and hazards to operating safety and the public. By improving railroad safety overall, FRA expects to achieve further improvement in the safety of hazardous materials transported by rail.

Recent Train Accidents Involving Release of Hazardous Material

FRA is concerned with all rail accidents that result in any release of a hazardous material, regardless of the quantity of material released. Again, the vast majority of hazardous material shipments arrive at their destinations safely; few tank cars have leaks or spills of any kind; fewer still are breached in an accident or incident.

Considering just chlorine, for example, since 1965 (the earliest data available) there have been at least 2.2 million tank car shipments of chlorine–only 788 of which were involved in accidents (0.036 percent of all the shipments). Of those accidents, there were 11 instances of a catastrophic loss (i.e., a loss of all, or nearly all) of the chlorine lading (0.0005 percent of all the shipments). Of the 11 catastrophic losses, four resulted in fatalities (0.00018 percent of all the shipments)–the most recent two of which (Macdona, Texas, and Graniteville, South Carolina) are discussed below.

For all hazardous materials, in the 12 years from 1994 through 2005, hazardous materials released in railroad accidents resulted in a total of 14 fatalities. In the same period, hazardous materials released in highway accidents resulted in a total of 116 fatalities. While even one death is too many, these statistics show that train accidents involving a release of hazardous material that causes death are infrequent and rare.

It is also important to quantify the risk of any hazardous material release–whether fatal or not–because of a railroad accident. In the year 2004, for example, there were approximately 1.7 million shipments of hazardous materials by rail, and there were 29 train accidents in which a hazardous material was released. In these accidents, a total of 47 hazardous material cars released some amount of product. The risk of a release was a tiny fraction of a percent (47/1,700,000, or 0.0028 percent).

Nonetheless, three recent train accidents that involved release of hazardous material and resulted in death and injury highlight specific rail safety areas that FRA continues to address to minimize accidents and make all rail transportation safer.

First, on January 18, 2002, a Canadian Pacific Railway Company (CP) train derailed in Minot, North Dakota, resulting in one death and 11 injuries due to the release of anhydrous ammonia. The National Transportation Safety Board (NTSB) determined the probable cause of the derailment to be an ineffective track inspection and maintenance program by CP that did not identify and replace cracked joint bars before they completely fractured and led to the breaking of a rail at the joint. I will discuss later FRA's research and regulatory initiatives to address joint bar cracks, and FRA's research concerning the survivability of hazardous material tank cars in accident situations.

Second, on June 28, 2004, a Union Pacific Railroad Company (UP) train collided with a Burlington Northern and Santa Fe Railway Company (BNSF) train in Macdona, Texas, breaching a loaded tank car containing chlorine and causing the deaths of three people. Based on initial findings, one train crew's noncompliance with UP's operating rules may have been a causal factor. As a result of this and other accidents, FRA entered into safety compliance agreements with UP on November 12 and December 2, 2004, addressing three geographical UP service units of concern. The agreements required UP to re-instruct all of the testing managers in these service units on the railroad's program of operational tests and inspections. Thereafter, UP was to formulate monthly plans and conduct operational tests and inspections in order to improve its employees' compliance with the railroad's operating rules. Subsequent FRA inspection of UP's entire southern region indicated that the railroad was making progress implementing the requirements of the agreements. On its own initiative, the railroad extended elements of the agreements to the balance of its system to strengthen management oversight of its program of operational tests.

Most recently, on January 6, 2005, a Norfolk Southern Railway Company (NS) train collided with a standing train on a siding in Graniteville, South Carolina. That accident resulted in the breach of a tank car containing chlorine, and nine people died from inhalation of chlorine vapors. The NTSB determined that the probable cause of the accident was the failure of a train crew to return a main line switch to its normal position. Hours later, the next train to traverse the main track was misdirected onto the wrong track, where it collided with a standing train. In response to the Graniteville accident, FRA acted immediately by issuing a formal Safety Advisory on January 10, 2005, strongly urging all railroads to adopt revised procedures to guard against such a human mistake. As a whole, railroads responded swiftly and favorably by adopting those recommendations.

Again, these three serious accidents were directly caused by general factors in the rail operating environment, e.g., track for Minot and human factors for Graniteville. Unfortunately, a result of each accident was the catastrophic release of a hazardous material. While FRA over the years has ordered hundreds of millions of dollars of tank car improvements and will not hesitate to do more when we have the requisite knowledge, the primary strategy for preventing catastrophic releases of hazardous materials is the prevention of accidents. FRA's goal is to address the specific factors that directly cause terrible accidents like the three discussed above, as well as to minimize and mitigate the effects of such accidents. Addressing those most prevalent direct causes of rail accidents will serve to make all forms of rail transportation safer. As discussed below, FRA has an aggressive and comprehensive action plan to address the root causes of such accidents and to examine and improve the integrity of tank cars used to transport hazardous materials.

National Rail Safety Action Plan

On May 16, 2005, DOT and FRA launched an aggressive and ambitious National Rail Safety Action Plan. The Action Plan lays out initiatives in a number of areas, including:

- Reducing human factor-caused train accidents;
- Improving track safety;
- Enhancing hazardous materials safety and emergency preparedness;
- Addressing the serious problem of fatigue among railroad operating employees;
- Better focusing FRA resources (inspections and enforcement) on areas of greatest safety concern; and
- Improving highway-rail grade crossing safety.

FRA has made substantial progress during the past year to successfully implement the various elements of the Action Plan. FRA continues to integrate the results of its oversight and research and development to foster the deployment and application of both new technologies and functional procedures by industry to prevent and minimize future accidents.

Human Factors Initiatives, Including Steps to Prevent Human Factor-Caused Accidents through Technology

Development of Human Factors Rulemaking

The Graniteville accident resulted from human error, and the Macdona accident is under review by the NTSB for an apparent human factor cause as well. Human factor-caused accidents constitute the largest category of train accidents, accounting for 37 percent of all train accidents over the last five years. Some human factors are addressed squarely by FRA regulations. For example, FRA's regulations on alcohol and drug use by operating employees were the first such standards in American industry to incorporate chemical testing, and they have been very successful in reducing accidents resulting from substance abuse. FRA also has regulations on locomotive engineer certification, and we enforce the hours of service restrictions, which are wholly governed by statute. However, FRA has been concerned that several of the leading causes of human factor accidents are not presently covered by any specific Federal rule, and they can have serious consequences. These leading causes include improperly lined switches, leaving cars in a position that obstructs a track, and shoving rail cars without a person on the front of the move to monitor conditions ahead.

In May 2005, FRA asked its Railroad Safety Advisory Committee (RSAC) to develop recommendations for a new human factors rule to address the leading causes of human factor accidents. In February 2006, RSAC reported that good progress on a number of issues had been made; however, it was unable to reach a consensus recommendation. FRA thanked the members of RSAC for the guidance provided and is now drafting a notice of proposed rulemaking targeted for publication later this year. As discussed in the RSAC, this regulation will address core railroad operating rules governing the handling of track switches, leaving cars in the clear, and "protecting the point" of shoving movements.

Issuance of Emergency Order No. 24

In response to an increasing number of train accidents caused by hand-operated main track switches in non-signaled territory being left in the wrong position and the potential for catastrophic accidents, FRA issued Emergency Order No. 24 in October 2005. This emergency order mandates that railroads retrain and periodically test employees on switch operating procedures and that railroads require increased communication among crewmembers and dispatchers regarding the proper positioning and locking of this type of switch. A switch position awareness form must be maintained by each employee operating a switch to record when the switch was operated and when it was returned to the normal position (i.e., typically lined for the main track). This emergency order is expected to remain in place until a final rule regarding human factor-caused accidents is promulgated and becomes effective.

Launch of "Close Call" Pilot Research Project

FRA is working to better understand "close calls" (i.e., unsafe events that do not result in a reportable accident but could have done so). In March 2005, FRA completed an overarching Memorandum of Understanding (MOU) with railroad labor organizations and management to develop pilot programs to document close calls. In other industries such as aviation, adoption of close-call reporting systems that shield the reporting employee from discipline (and the employer from punitive regulatory sanctions) has contributed to major reductions in accidents. In August 2005, an MOU between FRA and the DOT Bureau of Transportation Statistics (BTS) was signed. The MOU stipulated that BTS will act as a neutral party to receive the close-call reports and maintain the confidentiality of the person making the report. In October 2005, a contract to evaluate the close-call data was awarded to Altarum Institute of Alexandria, Virginia. Four railroads have expressed interest in taking part in this project. Educational efforts are underway to ensure that key stakeholders (local rail management and labor) at each potential site understand the purpose of the program and what would be required of them. Specifically, participating railroads will be expected to develop corrective actions to address the problems that may be revealed. Aggregated data from these projects may also provide guidance for program development at the national level. An Implementing MOU involving the first site is under discussion, and data collection is expected to begin in the near future.

Addressing Fatigue

Fatigue has long been a fact of life for many railroad operating employees, given their long and often unpredictable work hours and fluctuating schedules. The hours of service law sets certain maximum on-duty periods (generally 12 hours for operating employees) and minimum off-duty periods (generally 8 hours, or if the employee has worked 12 consecutive hours, a 10-hour off-duty period is required). FRA's knowledge of industry employee work patterns and the developing science of fatigue mitigation, combined with certain NTSB investigations indicating employee fatigue as a major factor, have persuaded FRA that fatigue is very likely at least a contributing factor in a significant number of human factor-caused accidents. FRA is conducting applied research aimed at validating and calibrating a fatigue model that can be used to more precisely determine the role of fatigue in human factor-caused accidents and improve crew scheduling practices by evaluating the potential for fatigue given actual crew management practices. When the model is properly validated, it will be made available to railroads and their employees as the foundation for developing crew scheduling practices based on the best current science. A final report is targeted for release in August 2006.

Fostering Positive Train Control (PTC)

PTC is an advanced train control technology that can prevent train collisions with automatic brake applications. It also provides capabilities such as automatic compliance with speed restrictions and enhanced protection of maintenance-of-way workers.

FRA's final rule enabling PTC became effective on March 7, 2005. The rule is a performance standard for PTC systems that railroads may choose to install. It does not require that PTC systems be installed. Rather, FRA is promoting the implementation of PTC by sponsoring development of PTC technologies though partnerships with States and railroads; and by helping to provide the Nationwide Differential Global Positioning System (NDGPS), a network of beacons that provides corrections and integrity monitoring to improve the accuracy and reliability of satellite-based positioning. NDGPS will play an important role in advanced PTC applications.

Today, Amtrak and other Northeast Corridor railroads have implemented a form of PTC that supports passenger train speeds up to 150 miles per hour. This system works well; however, it is expensive to operate and maintain and does not offer some operational efficiencies that may be available with newer PTC systems. Therefore, this system does not appear to be appropriate for use outside the Northeast Corridor.

Several freight railroads are exploring less complex "overlay" systems with a goal of increasing safety and improving operating efficiencies. The most highly developed of those undergoing testing is the Electronic Train Management System (ETMS) on the BNSF. CSX Transportation, Inc. (CSX) is working on a Communications Based Train Management System, and UP has recently announced an ambitious set of pilot projects that will use the same core technology being used by BNSF and CSX. In contrast, NS has indicated that it will proceed with a fully "vital" technology. The Alaska Railroad Corporation is also working towards implementing a PTC system on its entire territory.

A significant challenge for FRA and the railroads in developing such systems for use in the contiguous 48 States is to ensure that they are interoperable (that is, locomotives from railroad "A" having one kind of PTC system can operate seamlessly on railroad "B" which has a different PTC system).

Identification of Technology to Improve Safety in Dark (Non-signaled) Track Territory

In November 2005, FRA partnered with BNSF in a $1 million Switch Point Monitoring System pilot project. The main objective of the project is to develop a low-cost system that electronically monitors, detects, and reports a misaligned switch on the mainline track located in dark, or non-signaled, track territory. Switch position monitoring units are now in place at 49 switch locations on the railroad's Avard Subdivision in Oklahoma. If a switch is left other than in the normal position, the dispatcher at the railroad's operations center is alerted, and corrective action is taken to protect train movements. A final report is expected in August 2006. Along with the planned human factor rule, this new switch monitoring system may prevent future train collisions and derailments like the Graniteville accident.

Track Safety Initiatives

Enhancement of Track Defect-Detection Capability and Procedures

The Minot derailment resulted from track defects. Track-caused accidents are the second-largest category of train accidents, comprising 34 percent of all train accidents over the last five years. Some of the leading causes of track-caused accidents are very difficult to detect during normal railroad inspections. Broken joint bars, for example, are a leading cause, but the kinds of cracks in those bars that foreshadow a derailment-causing break are very hard to spot with the naked eye. Similarly, broken rails account for some of the most serious accidents, but the internal rail flaws that lead to many of those breaks can be detected only by specialized equipment.

To improve track safety, FRA is developing an automated, high-resolution video inspection system for joint bars that can be deployed on a hi-rail vehicle to detect visual cracks in joint bars without having to stop the vehicle. In October 2005, a prototype system that inspects joint bars on both sides of each rail was successfully demonstrated. Testing showed that the high-resolution video system detected cracks that were missed by the traditional visual inspections. In 2006, the system is being enhanced with new developments to improve the reliability of joint bar detection and to add capabilities to include Global Positioning System

(GPS) coordinates for each joint for future inspection and identification. Additionally, software is being developed and tested to automatically scan the images, detect the cracked joint bar, and send a message to the operator with an image of the broken joint bar.

FRA is also addressing joint bar cracks on the regulatory front. On November 2, 2005, FRA issued an interim final rule (IFR) requiring track owners to develop and implement a procedure for the detailed inspection of rail joints in continuous welded rail (CWR) track. Among other things, track owners must perform visual, on-foot, periodic inspections of joints in CWR track and keep records of these inspections. Further, track owners are required to identify joint bar cracks as well as inspect for joint conditions that can lead to the development of joint bar cracks. Based on the data that FRA will collect through implementation of this rule, FRA will establish a program to review joint bar crack data. Finally, the IFR encourages the development and adoption of automated methods to improve the inspection of rail joints in CWR track. This rulemaking is a direct result of a Congressional mandate in the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) and of NTSB recommendations arising out of various accidents involving cracked joint bars. Currently, FRA is reviewing public comments about this IFR in conjunction with the RSAC, and anticipates issuing a final rule later this year.

Deployment of Two Additional Automated Track Inspection Vehicles

Subtle track geometry defects, such as rails being uneven or too wide apart, are difficult to identify during a typical walking or hi-rail inspection. That is why FRA has developed automated track inspection and research vehicles to improve the ability to identify problems, and ensure they are repaired, before a train accident occurs. In May 2005, FRA added the T-18 vehicle to its fleet. Two more inspection vehicles with similar technology are currently being constructed (one that is self-propelled and one that is towed). They are expected to be delivered in September 2006 and January 2007. Once fully operational, they will allow FRA to inspect nearly 100,000 track-miles each year, tripling the number of miles currently inspected. This additional capability will permit FRA to inspect more miles of major hazardous materials and passenger routes, while also having the ability to follow up more quickly on routes where safety performance is substandard.

Rail Transport of Hazardous Materials: The Safety Record and Safety Initiatives

As noted above, the rail industry's record on transporting hazardous materials is very good. The industry transports nearly two million shipments of hazardous materials annually, ordinarily without incident. However, the Graniteville accident in 2005, which alone involved nine deaths as the result of a release, demonstrates the potential for serious consequences from train accidents. It is also important to note that although train accidents only rarely result in releases, non-accident releases (NARs), such as releases from stationary tank cars in rail yards or chemical facilities, are a continuing problem. In 2004, for example, there were 692 NARs from tank cars. The primary cause of NARs is improper inspection and securement of tank cars by shippers (e.g., loose closures, open valves, defective gaskets) in violation of the Federal Hazardous Materials Regulations (HMR). Allow me to discuss the HMR and DOT's role in promulgating and enforcing them for the safe transportation of hazardous materials by rail.

The HMR are designed to achieve three goals:

- To ensure that hazardous materials are packaged and handled safely during transportation;
- To provide effective communication to transportation workers and emergency responders of the hazards of the materials being transported; and
- To minimize the consequences of an accident or incident should one occur.

Under the HMR, hazardous materials are categorized by analysis and experience into hazard classes and packing groups based upon the risks they present during transportation. The HMR specify appropriate packaging and handling requirements for hazardous materials, and require a shipper to communicate the material's hazards through the use of shipping papers, package marking and labeling, and vehicle placarding. The HMR also require shippers to provide emergency response information applicable to the specific hazard or hazards of the material being transported. The HMR also mandate training requirements for persons who prepare hazardous materials for shipment or who transport hazardous materials in commerce. The DOT Pipeline and Hazardous Materials Safety Administration (PHMSA) is responsible for promulgating the HMR, and FRA is responsible for enforcing the HMR in the railroad industry. Both agencies work cooperatively in carrying out and assisting each other with their responsibilities, combining their expertise and resources to promote the safe transportation of hazardous materials by rail.

Reducing NARs and the accidental release of hazardous materials in the rail industry is being advanced in particular by the concerted efforts of FRA's hazardous materials field forces, their diligent follow-up on hazardous materials releases, and FRA's active enforcement of the HMR against persons who fail to properly package hazardous materials for rail transportation. In this effort, FRA is utilizing the full array of our enforcement tools—from education and warnings, to safety advisories and orders, to civil penalties and recommendations for criminal prosecution. The agency is also actively engaged in activities intended to reduce the likelihood that a tank car may be breached if an accident does occur, complementing our effort to reduce the likelihood of train accidents. Realizing that we are still a ways off from preventing all accidents, FRA has developed initiatives to ensure that emergency responders will be fully prepared to minimize the loss of life and damage when an accident or release does occur.

<u>*Ensuring Emergency Responders Have Access to Key Information About Hazardous Materials Transported by Rail*</u>

Emergency responders presently have access to a wide variety of information regarding hazardous materials transported by rail. Railroads and hazardous materials shippers are currently subject to the hazard communication requirements of the HMR, as noted earlier. In addition, these industries work through the American Chemistry Council's Transcaer® (Transportation Community Awareness and Emergency Response) program to familiarize local emergency responders with railroad equipment and product characteristics. PHMSA publishes the *Emergency Response Guidebook*, with the intention that it may be found in virtually every fire and police vehicle in the United States.

In March 2005, with FRA encouragement, the Association of American Railroads (AAR) amended its Recommended Operating Practices for Transportation of Hazardous Materials (Circular No. OT-55-H) to expressly provide that local emergency responders, upon written request, will be provided with a ranked listing of the top 25 hazardous materials transported by rail through their community. This is an important step to allow emergency responders to plan, and better focus their training, for the type of rail-related hazardous materials incident that they could potentially encounter.

In July 2005, again with FRA encouragement, CSX and CHEMTREC (the chemical industry's 24-hour resource center for emergency responders) entered into an agreement to conduct a pilot project to see if key information about hazardous materials on the train could be more quickly and accurately provided to first responders in the crucial first minutes of an accident or incident. The project is designed so that if an actual hazardous material rail accident or incident occurs, CHEMTREC watchstanders, who interact with emergency response personnel, will have immediate access to CSX computer files regarding the specific train, including the type of hazardous materials being carried and their exact position in the train consist. FRA is also working through the AAR to encourage the other major railroads to participate in a similar project.

Improving Tank Car Integrity through Research and Development

PHMSA's and FRA's efforts to improve tank car survivability have a long and effective history. Working with industry, all tank cars carrying hazardous materials now have top and bottom shelf couplers, and, as appropriate, tank cars are equipped with head shields, thermal protection, and skid protection for protruding bottom outlets. Tank cars carrying specific product groups, such as toxic inhalation hazard materials (TIH) and other particularly hazardous substances, are subject to additional requirements which become fully effective July 1, 2006, after a 10-year phase-in period. In addition, because tank cars are built to standards of high quality and are required to be inspected and re-qualified periodically, DOT has instituted requirements for the maintenance of tank cars using qualified technicians employing qualified procedures and documenting their efforts in a standard format for effective future reference and analysis.

We continue to look for other ways to improve tank car survivability. Prior to the August 2005 enactment of Section 9005 of SAFETEA-LU, FRA had initiated tank car structural integrity research stemming from the circumstances of the 2002 Minot derailment. Current research involves a three-step process to assess the effects of various types of train accidents (e.g., a derailment or collision) on a tank car. The first phase is development of a physics-based model to analyze the kinematics of rail cars in a derailment. The second phase is development of a valid dynamic structural analysis model; and the third phase is an assessment of the damage created by a puncture and entails the application of fracture mechanics testing and analysis methods. DOT's Volpe Center is doing the modeling work now, and FRA will dovetail this ongoing research with the requirements of Section 9005.

In addition, FRA intends to evaluate an explosive-resistant coating that is being used to enhance the armor protection of military vehicles in Iraq for potential use on tank cars to reduce the likelihood of puncture. The material also has a self-sealing property that could be useful to seal a hole in a tank car and mitigate the severity of incidents.

Improving the Safety of Railroad Tank Car Transportation of Hazardous Materials through a Joint PHMSA-FRA Review of Design and Operational Factors

In response to the recent accidents discussed above, as well as other rail accidents resulting in tank car breaches and loss of product, and concerns expressed by the industry and the public, PHMSA and FRA have initiated a comprehensive review of design and operational factors that affect rail tank car safety. As part of an effort to solicit public involvement in this ongoing effort, PHMSA and FRA held a public meeting on May 31 and June 1 to address the safe transportation of hazardous materials in tank cars. The meeting provided interested parties an opportunity to comment on the safety of rail tank car transportation of hazardous materials. PHMSA and FRA regularly work closely with tank car manufacturers, shippers, and railroads, to gather expertise and input into the development of tank car standards. FRA is in the process of opening a public docket to receive further information and comment on this issue. FRA also plans to make a transcript of the meeting available for public review in the docket.

In conducting this comprehensive review, the two agencies will utilize a risk management approach to identify ways to enhance the safe transportation of hazardous materials in tank cars, including tank car design, manufacture, and requalification; operational issues such as human factors, track conditions and maintenance, wayside hazard detectors, and signal and train control systems; and emergency response. This initiative with PHMSA complements FRA's other ongoing safety efforts discussed above.

A valuable source of tank car expertise lies in the combined resources of the members of the AAR Tank Car Committee (TCC) and its associated working groups. The TCC is recognized within the HMR as the body exercising ministerial approval of railroad tank car and service equipment designs. The working groups are comprised of a representative cadre of tank car engineers, railroad operating experts, shippers, and fleet owners. At any one time they are considering many potential safety improvements for tank cars. FRA has found that the input of all members of the TCC is invaluable in informing FRA's safety decisions. FRA participates within the TCC and is active in many of the working groups.

A major assignment now before the TCC is the development of recommendations to satisfy a charge by top railroad executives to investigate ways to improve the tank car itself. Born out of the significant accidents at Minot, Macdona, and Graniteville, as described above, the directive to the TCC was to create a tank car design that would reduce the potential for a release from an accident by 65 percent. This effort relies heavily on a risk analysis prepared by the University of Illinois. In developing its analysis, the University of Illinois relied heavily on the claims stemming from an engineering analysis conducted by Trinity Industries, Inc., a major builder of tank cars and other transportation equipment, related to a new tank car design developed by Trinity (the Trinity Car). While the risk analysis uses sound scientific methods, several assumptions were used that cause concern. Although FRA applauds the industry's efforts, FRA believes that achieving a 65 percent reduction in the potential for a release from an accident is an unrealistic goal, especially when directed at only one aspect of hazardous materials transportation safety—the tank car transporting the hazardous material. FRA has made this concern known to the AAR, but continues to support its efforts in seeking safety improvements that provide greater protection for the American public.

Although the Trinity Car design differs in several areas from the Federal tank car safety standards, the car design could yield safety benefits. In order to permit the manufacture and sale of this new design, FRA prepared an extensive evaluation of the car design and the data submitted in support of this design and referred that evaluation to PHMSA. While the design raises important questions, PHMSA and FRA believe that, given operational restrictions and inspection requirements imposed by a short-term variance granted by PHMSA, the car can provide a valuable tool for data collection and innovation analysis. PHMSA's short-term variance, however, was issued based on a finding that the Trinity car used under the specified conditions provides an equivalent level of safety to current DOT specification cars.

As is appropriate for an early data collection and evaluation effort, cost-benefit analysis is not yet underway for the use of the Trinity Car across the industry. It is too early to predict whether the structural integrity research, the data gathered through use of the Trinity Car, or any other ongoing project will lead to regulatory action. Any rulemaking on tank car improvements will require comprehensive risk and cost-benefit analyses to ensure that any benefit gained by any improvement does not unduly burden rail carriers, shippers, and consumers with exorbitant costs as a result. The success of long phase-in periods in past rulemakings requiring head shields, thermal protection, shelf-couplers, bottom-outlet protection, and other changes shows that tank car safety is best achieved through deliberate action rather than "overnight" mandates.

Section 333 Conference

Section 333 of title 49 of the United States Code authorizes the FRA Administrator, as delegate of the Secretary of Transportation, to convene conferences at the request of one or more railroads to address coordination of operations and facilities of rail carriers in order to achieve a more efficient, economical, and viable rail system. Persons attending a section 333 conference are immune from antitrust liability for any discussions at the conference, and can also receive immunity for any resulting agreements that receive FRA approval.

FRA has granted a request by the AAR and the American Chemistry Council to convene a section 333 conference to discuss ways to minimize security and safety risks flowing from the transportation by rail of TIH materials. FRA is working with the parties on developing an agenda for the conference. The conference will provide the railroads and chemical manufacturers and shippers with the limited antitrust immunity they need to meet and discuss approaches to reduce the amount of TIH materials moved by rail, and to enhance the safety and security of TIH materials that are moved. FRA, PHMSA, and representatives from the Department of Justice, the Federal Trade Commission, the Transportation Security Administration, and the Surface Transportation Board (STB) will assist the parties in their discussions.

Initially, efforts of the conference will be focused on chlorine and anhydrous ammonia rail transport because they represent over 80 percent of all TIH rail shipments. FRA anticipates seeking public input on any agreements proposed by the parties before they are approved by FRA. In some instances, the projects agreed to at the conference may need the approval of the STB in order to be implemented.

Conclusion

FRA’s approach to enhancing the safety of tank cars and the transportation of hazardous materials by rail tank cars is multi-faceted. In combination, the comprehensive safety assurance and hazard mitigation strategies that I have discussed are providing FRA an effective and cost-based decision-making process to collect information that we believe will make rail operations and tank car designs of the future safer for the public and the rail transportation industry. We look forward to discussing strategies and priorities for moving forward towards this end, and we thank the Subcommittee for its willingness to examine this complex issue.